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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/668,722

09/22/2003

Stefan Schulz

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EXAMINER

NEWAY, SAMUEL G

ART UNIT

PAPER NUMBER

2626

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/668,722

Applicant(s)

SCHULZ ET AL.

Examiner

Samuel G. Neway

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 12/22/03, 03/23/06
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This is responsive to the Application filed September 22, 2003.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1 – 5, 7, and 9 – 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Bobisuthi et al. (USPN 6,941,161).

Claim 1:

Bobisuthi discloses a method of processing a speech signal (Abstract),  
comprising the steps:

a) receiving a speech signal in a sound wave through air with a microphone in a speech receiving device, and, with said microphone ("detecting ... voice signal at a microphone", col.12, lines 30-33, Figure 7 and related text), converting said speech signal to a converted signal representing said speech signal ("a signal is generated at a microphone ...", col. 12, lines 40-41, Figure 7 and related text);

b) evaluating a speech quality of said speech signal by analyzing and comparing said converted signal with at least one reference parameter, to determine at least

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whether said speech quality of said speech signal as received by said microphone is acceptable or unacceptable ("speech envelope is compared ... to a second threshold in order to determine whether the strength of the signal at the microphone is sufficiently strong ...", col. 12, lines 49-54, Figure 7 and related text); and

c) when said step b) determines that said speech quality is unacceptable or acceptable, then providing to a signaling device a quality feedback information signal dependent on and indicative of said speech quality determined as being unacceptable or acceptable ("if a speech peak has not crossed the audible threshold ... then an indicator is activated", col. 13, lines 17-20, Figure 7 and related text, see also Figures 2A, 2B, and items 205(a), 205(b) and related text).

Claim 2:

Bobisuthi discloses the method according to claim 1, wherein said signaling device is located in said speech receiving device ("the invention may be used in a telephone handset, cellular phone, or microphone in a PA system", col. 2, lines 65-67, Figure 2A, item 205(a) and related text. Note that if the invention is, for example, used in a cellular phone the signaling device will inherently be located in the phone).

Claim 3:

Bobisuthi discloses the method according to claim 1, further comprising emitting from said signaling device a humanly perceptible feedback signal in response to said quality feedback information signal, and dependent on and indicative of said speech quality determined as being unacceptable or acceptable ("... indicator 205(a) may be part of the adapter, such as a visual indicator like a light emitting diode (LED), or an

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auditory indicator, such as a speaker that generates an audible tone", col. 5, lines 56-63).

Claim 4:

Bobisuthi discloses the method according to claim 3, wherein said signaling device is located within a range of human perceptibility of said humanly perceptible feedback signal by a human speaker who is generating said speech signal by speaking (" ... heard directly by the user", col. 5, lines 56-63).

Claim 5:

Bobisuthi discloses the method according to claim 3, wherein said signaling device is an optical signaling device, and said humanly perceptible feedback signal is a visible feedback signal (" ... indicator 205(a) may be part of the adapter, such as a visual indicator like a light emitting diode (LED)", col. 5, lines 56-63).

Claim 7:

Bobisuthi discloses the method according to claim 3, wherein said signaling device is an acoustic signaling device, and said humanly perceptible feedback signal is an audible feedback signal (" ... indicator 205(a) may be part of the adapter, such as ... an auditory indicator, such as a speaker that generates an audible tone", col. 5, lines 56-63).

Claim 9:

Bobisuthi discloses the method according to claim 3, wherein said signaling device includes a combination of at least two of an optical signaling element, an acoustic signaling element, and a mechanical signaling element, and wherein said

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humanly perceptible feedback signal correspondingly includes a combination of at least two of a visible feedback signal, an audible feedback signal, and a tactile feedback signal ("... indicator 205(a) may be part of the adapter, such as a visual indicator like a light emitting diode (LED), or an auditory indicator, such as a speaker that generates an audible tone", col. 5, lines 56-63).

## Claim 10:

Bobisuthi discloses the method according to claim 1, wherein said step c) comprises providing said quality feedback information signal only when said speech quality is determined as being unacceptable ("indicator notifies a telephone headset user that the voice signal at the microphone is not sufficiently strong", col. 5, lines 54-56).

## Claim 11:

Bobisuthi discloses the method according to claim 1, wherein said step c) comprises providing said quality feedback information signal only when said speech quality is determined as being acceptable ("the indicator 380 will flash only for the interval that the signal exceeds the noise threshold", col. 8, lines 16-19).

## Claim 12:

Bobisuthi discloses the method according to claim 1, wherein said step c) comprises providing said quality feedback information signal respectively both when said speech quality is determined as being unacceptable and when said speech quality is determined as being acceptable, whereby said quality feedback information signal is respectively indicative of said speech quality determined as being unacceptable and

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indicative of said speech quality determined as being acceptable whenever applicable ("the indicator 380 will flash only for the interval that the signal exceeds the noise threshold and be blanked only for the time it is actively above the audible threshold", col. 8, lines 16-19).

Claim 13:

Bobisuthi discloses the method according to claim 12, wherein said step c) comprises providing said quality feedback information signal continuously during all of said step a) ("the indicator 380 will flash only for the interval that the signal exceeds the noise threshold and be blanked only for the time it is actively above the audible threshold", col. 8, lines 16-19, Figure 7 and related text).

Claim 14:

Bobisuthi discloses the method according to claim 1, wherein said signaling device emits a humanly perceptible instruction as to improving said speech quality that has been determined as being unacceptable ("the indication will be deactivated", col. 13, lines 20-23, Figure 7 and related text).

Claim 15:

Bobisuthi discloses the method according to claim 1, further comprising providing said converted signal, with or without further processing, to an audio output device including a loudspeaker, regardless whether said evaluating in said step b) determines that said speech quality is acceptable or unacceptable ("present invention provides a talker-side implementation that compares a voice signal from a headset microphone ... in order to detect whether ... the signal level at the microphone is sufficiently strong ...

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the invention may be used in ... a cellular phone ", col. 2, lines 50-67. Note that it is inherent, in a cellular phone communication system, that the converted signal is outputted in the receiving communication device).

Claim 16:

Bobisuthi discloses the method according to claim 1, wherein said evaluating in said step b) comprises analyzing at least one of a signal-to-noise ratio, a signal level magnitude, and a signal level constancy of said converted signal ("indicator notifies a telephone headset user that the voice signal at the microphone is not sufficiently strong (i.e. a low signal-to-noise ratio)", col. 5, lines 54-56).

Claim 17:

The method according to claim 1, wherein said evaluating in said step b) is carried out within said speech receiving device ("the invention may be used in a telephone handset, cellular phone, or microphone in a PA system", col. 2, lines 65-67, Figure 2A item 210 and related text. Note that if the invention is, for example, used in a cellular phone the evaluating will inherently be carried out in the phone).

Claim 18:

Bobisuthi discloses the method according to claim 1, wherein said steps b) and c) are carried out in real-time during said step a) (Figure 7 and related text).

Claim 19:

Bobisuthi discloses the method according to claim 1, further comprising:  
generating said speech signal by a human speaker speaking said speech signal;  
emitting from said signaling device a feedback signal that is perceptible by said human



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speaker in response to said quality feedback information signal and dependent on and indicative of said speech quality; and when said speech quality is determined as being unacceptable, then further comprising said human speaker taking corrective measures in response to said feedback signal, said corrective measures selected from the group consisting of speaking more clearly, speaking more loudly, changing a spacing distance between said microphone and said human speaker's mouth, and changing a relative angular orientation or position of said microphone relative to said human speaker's mouth ("The present invention is directed towards a talker-side device that measures the strength of a voice signal from a microphone. The microphone may be positioned on an adjustable or fixed arm on a communications headset or in a telephone handset. Additionally, the present invention may operate on a PA system comprising a microphone or any other device requiring a microphone to be properly positioned in relation to a talker's mouth", col. 4, lines 27-35).

**Claim 20:**

Bobisuthi discloses the method according to claim 1, further comprising allocating a measure for said speech quality to said speech signal, wherein said step b) is carried out in a speech analysis and evaluation arrangement incorporated in said speech receiving device (Figure 2A, item 215 and related text), and wherein said speech receiving device is a component of, and said method is carried out in, an aircraft speech transmission arrangement on board an aircraft ("the invention may be used in a ... microphone in a PA system", col. 2, lines 65-67. Note that the speech transmission on board of an aircraft is a PA (Public Address) system).

Claim 21:

Bobisuthi discloses an apparatus for processing a speech signal, comprising:  
a speech receiving device including a microphone and a speech evaluation arrangement that is incorporated in said speech receiving device, connected to an output of said microphone ("detecting ... voice signal at a microphone", col.12, lines 30-33, Figure 7 and related text), and adapted to evaluate a speech quality of a speech signal received by said microphone and to provide a quality feedback information signal indicative of said speech quality at a feedback output of said speech evaluation arrangement ("speech envelope is compared ... to a second threshold in order to determine whether the strength of the signal at the microphone is sufficiently strong ...", col. 12, lines 49-54, Figure 7 and related text, Figure 1 items 105 and 125 and related text);

an audio output device that is separate from said speech receiving device and that is connected directly or indirectly to said output of said microphone or to a speech signal output of said speech evaluation arrangement (Figure 1 item 100 and related text);

and a signaling device that is connected to said feedback output of said speech evaluation arrangement so as to receive said quality feedback information signal, adapted to emit a humanly perceptible feedback signal responsive to said quality feedback information signal and indicative of said speech quality, and arranged at a location within a range of perception of said feedback signal by a human user of said speech receiving device (" ... indicator 205(a) may be part of the adapter, such as a

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visual indicator like a light emitting diode (LED), or an auditory indicator, such as a speaker that generates an audible tone", col. 5, lines 56-63, Figure 2A item 205(a) and related text).

Claim 22:

Bobisuthi discloses the apparatus according to claim 21, wherein said signaling device is incorporated in said speech receiving device ("the invention may be used in a telephone handset, cellular phone, or microphone in a PA system", col. 2, lines 65-67, Figure 2A item 205(a) and related text. Note that if the invention is, for example, used in a cellular phone the signaling device will inherently be located in the phone).

Claim 23:

Bobisuthi discloses the apparatus according to claim 21, wherein said speech evaluation arrangement comprises a programmable processing and computing unit and a speech processing software program loaded therein (Figure 2A items 210, 215 and related text).

Claim 24:

Bobisuthi discloses the apparatus according to claim 21, wherein said signaling device comprises one of a visual display unit, a vibrator element, and a loudspeaker unit ("... indicator 205(a) may be part of the adapter, such as a visual indicator like a light emitting diode (LED), or an auditory indicator, such as a speaker that generates an audible tone", col. 5, lines 56-63, Figure 2A item 205(a) and related text).

Claim 25:

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Bobisuthi discloses the apparatus according to claim 21, wherein said signaling device comprises a plurality of different ones of a visual display unit, a vibrator element, and a loudspeaker unit ("... indicator 205(a) may be part of the adapter, such as a visual indicator like a light emitting diode (LED), or an auditory indicator, such as a speaker that generates an audible tone", col. 5, lines 56-63, Figure 2A item 205(a) and related text).

Claim 26:

Bobisuthi discloses the apparatus according to claim 21, wherein said speech receiving device is a portable telephone-style receiver handset ("the invention may be used in a telephone handset, cellular phone, or microphone in a PA system", col. 2, lines 65-67).

Claim 27:

Bobisuthi discloses the apparatus according to claim 21, incorporated in an aircraft speech transmission arrangement on board an aircraft ("the invention may be used in a ... microphone in a PA system", col. 2, lines 65-67. Note that the speech transmission on board of an aircraft is a PA (Public Address) system).

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bobisuthi et al. (USPN 6,941,161) in view of Dezonno (USPN 5,712,954).

Claim 6:

Bobisuthi discloses the method according to claim 5, but he does not explicitly disclose wherein said visible feedback signal includes a visible text message.

Dezonno discloses a system and method for monitoring audio power level of a user's speech where a text message is displayed to alert the user ("an appropriate message is displayed on an agent terminal 118 to "Speak Softer" or to "Speak Louder"', Abstract).

It would have been obvious to one with ordinary skill in the art at the time of the invention to alert the user using text messages in Bobisuthi's method because it is one of numerous methods that "may be employed to alert the agent of speaking too loudly or too softly" (Dezonno, col.6, lines 1-6)

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bobisuthi et al. (USPN 6,941,161) in view of Osborn et al. (USPN 6,119,022).

Claim 8:

Bobisuthi discloses the method according to claim 3, but he does not explicitly disclose wherein said humanly perceptible feedback signal is a tactile feedback signal.

Osborn et al. discloses a system for alerting a communication device user where the alerting signal is "visual, aural, and/or tactile in nature" (col. 6, lines 49-51).

It would have been obvious to one with ordinary skill in the art at the time of the invention to alert the user using tactile feedback signal in Bobisuthi's method because tactile signals are adapted to "gaining the attention of an individual without use of sound or light" (Osborn, col.1, lines 14-16).

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Silverstein et al. (USPN 7,050,978) discloses a system and method of providing evaluation feedback to a speaker while giving a real-time oral presentation.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel G. Neway whose telephone number is 571-270-1058. The examiner can normally be reached on Monday - Friday 8:30AM - 5:30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SN



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